

WHAT IS CLAIMED IS:

1. A wireless positioning method for estimating a position of a terminal by using signals transmitted from at least first and second base stations in a cellular communication system, comprising:

5 a first step of canceling a receiving signal from the first base station of receiving strength stronger than that from the second base station; and

 a second step of processing the receiving signal from the
10 second base station by the terminal after the first step.

2. A wireless positioning method according to claim 1, further comprising:

 a third step of storing the receiving signals from the first and second base stations into a storing circuit in the
15 terminal;

 a fourth step of forming a replica of the receiving signal of the first base station from the stored signals; and

 a fifth step of subtracting the replica from the stored signals.

20 3. A wireless positioning method according to claim 2, further comprising:

 a sixth step of forming the replica by processing a component of the receiving signal from the first base station in a procedure of despread, demodulation and respread by
25 using the code division multiple access (CDMA) system.

4. A wireless positioning method according to claim 3, wherein the sixth step has a seventh step of amplifying a receiving signal after the despreading, demodulation and resreading.

5 5. A wireless positioning method according to claim 4, wherein the seventh step includes an eighth step of correcting at least one of amplitude fluctuation and phase rotation by a signal propagation path from the first base station.

6. A wireless positioning method according to claim 5, further comprising:

10 a ninth step of estimating an average phase rotation amount in association with a carrier frequency deviation between the first base station and the terminal from the receiving signal from the first base station by a linear equation; and

15 a tenth step of correcting the phase rotation of the receiving signal from the second base station by the linear equation.

7. A wireless positioning method according to claim 6, further comprising:

20 an eleventh step of estimating phase rotation amounts regarding the first and second base stations; and

a twelfth step of calculating correlation between the phase rotation amounts regarding the first and second base stations,

25 wherein coherent summation is executed for time required

until the correlation becomes a threshold or longer.

8. A wireless positioning apparatus comprising:

a signal processor for canceling a receiving signal from a first base station of which receiving strength is stronger than that of a receiving signal from a second base station in a cellular communication system; and

a CPU for processing an output signal of the signal processor.

9. A wireless positioning apparatus according to claim

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further comprising a storing circuit for storing receiving signals from the first and second base stations,

wherein the signal processor has:

a replica signal generating circuit for generating a replica of the receiving signal of the first base station from the signals stored in the storing circuit; and

a subtraction circuit for subtracting the replica from the stored signals.

10. A wireless positioning apparatus according to claim

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wherein the replica signal generating circuit has:

a despreading circuit of despreading a component of a receiving signal from the first base station by using the code division multiple access system (CDMA);

a demodulating circuit for demodulating an output signal

of the despreading circuit; and

a resreading circuit for resreading an output signal of the demodulating circuit.

11. A wireless positioning apparatus according to claim 10, further comprising an amplifying circuit for amplifying an output signal of the resreading circuit.

12. A wireless positioning apparatus according to claim 11, further comprising a correcting circuit for correcting at least one of amplitude fluctuation and phase rotation by a signal propagation path from the first base station.

13. A wireless positioning method for estimating a position of a terminal by using signals transmitted from at least first and second base stations in a cellular communication system, comprising:

a ninth step of estimating an average phase rotation amount associated with a carrier frequency deviation between the first base station and the terminal from a receiving signal from the first base station by a linear equation; and

a tenth step of correcting phase rotation of a receiving signal from the second base station by the linear equation.

14. A wireless positioning method according to claim 13, further comprising:

an eleventh step of estimating phase rotation amounts with respect to the first and second base stations; and

a twelfth step of calculating correlation between the

a twelfth step of calculating correlation between the phase rotation amounts with respect to the first and second base stations,

wherein coherent summation is executed for time required until the correlation becomes a threshold or longer.

5 15. A base station transmission timing measuring apparatus comprising:

timing measuring means measuring for transmission timings of signals of first and second base stations from timings of signals received from the first and second base stations, and

interference canceling means for canceling the receiving signal from the first base station of which strength is stronger than that of the receiving signal from the second base station.

16. A base station transmission timing measuring apparatus according to claim 15, further comprising:

an automatic gain control circuit to which an output signal of the interference canceling means is supplied.

17. A base station transmission timing measuring apparatus for measuring transmission timings of signals of first and second base stations from timings of signals received from the first and second base stations, comprising:

frequency deviation estimating means for approximating a carrier frequency deviation between the first base station and the terminal by a linear equation; and

correcting means for correcting a frequency deviation of

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a receiving signal from the second base station by the linear equation.